
September 24, 2015

Call Slides and Discussion Summary
Call Participants

Residential Network Members
- District of Columbia Sustainable Energy Utility
- Efficiency Nova Scotia
- Elevate Energy
- Energy Efficiency Specialists, LLC
- Greater Cincinnati Energy Alliance
- Institute for Market Transformation
- International Center for Appropriate & Sustainable Technology (ICAST)
- Local Energy Alliance Program (LEAP)
- MaGrann Associates
- Mitsubishi Electric Cooling and Heating

Non-Members
- National Association of State Energy Officials (NASEO)
- National Grid
- ACTION-Housing, Inc.
- BlueGreen Alliance
- Building Envelope Materials
- California Housing Partnership Corporation
- CLEAResult
- Democracy And Regulation
- Economic Opportunity Studies, Inc.
- Environmental Design / Build
- Franklin Energy Services
Call Participants

**Non-Members (con’t)**
- Fresh Energy
- Fruitfull Energy
- Green & Healthy Homes Initiative
- Green Madison
- Holy Cross Energy
- Housing Partnership Network
- Houston Housing Authority
- LINC Housing
- Mercy Housing
- Moen Inc.

- Mpower Oregon
- National Association of Housing and Redevelopment Officials
- National Church Residences
- National Housing and Rehab Association (NH&RA)
- National Housing Law Project
- New Buildings Institute
- NYC Housing Development Corporation
- NYC Mayor's Office of Sustainability
- Stone Energy Associates
- Sustainable Environments Inc.
- TRC Energy Services
- U.S. Department of Housing and Urban Development (HUD)
- Volunteers of America
Call Participant Locations
Agenda

- Agenda Review and Ground Rules
- Opening Polls
- Brief Residential Network Overview
- Featured Speakers
  - Thom Amdur, Executive Director, National Housing and Rehab Association (NH&RA)
  - Ravi Malhotra, Founder and President, ICAST (International Center for Appropriate and Sustainable Technology), Residential Network Member
  - Alan Miletí, Manager, Energy & Capital Planning, National Church Residences
- Discussion
  - Are there other examples of programs successfully bringing energy efficiency retrofits to the multifamily, affordable housing sector?
  - What are the challenges of incorporating energy efficiency into multifamily, affordable housing rehabilitation projects? What strategies can help mitigate those challenges?
  - What type of training, follow-up or other interventions can be used to sustain energy efficiency improvements after the work has been done (e.g., training for building managers)? How do programs measure and track success?
  - Are there other questions, best practices, or lessons learned related to multifamily, affordable housing energy efficiency projects that you would like to share?
- Closing Poll and Upcoming Call Schedule
Opening Poll

Which of the following best describes your organization’s experience with multifamily, affordable housing rehabilitation projects?

- Some experience/familiarity – 58%
- Very experienced/familiar – 33%
- Limited experience/familiarity – 10%
- No experience/familiarity – 0%
- Not applicable – 0%
Better Buildings Residential Network: Connects energy efficiency programs and partners to share best practices and learn from one another to increase the number of homes that are energy efficient.

Membership: Open to organizations committed to accelerating the pace of home energy upgrades.

Benefits:
- Peer Exchange Calls 4x/month
- Tools, templates, & resources
- Recognition in media, materials
- Speaking opportunities
- Updates on latest trends
- Voluntary member initiatives
- Residential Program Solution Center guided tours

Commitment: Provide DOE with annual number of residential upgrades, and information about associated benefits.

For more information or to join, email bbresidentialnetwork@ee.doe.gov
Web portal of residential EE upgrade program resources, & lessons learned to plan better, avoid reinventing the wheel.

- BB Neighborhood Program, Home Performance with ENERGY STAR Sponsors+

- Provides:
  - Step-by-step guidance
  - Examples
  - Tools and Templates
  - Quick Links and Shortcuts
  - Lessons learned
  - Proven Practices posts – see the latest on [Tiered Financing](#)
  - Tips

- Continually add content to support residential EE upgrade programs—*member ideas wanted!*

[https://bbnp.pnnl.gov/](https://bbnp.pnnl.gov/)
National Perspective:
National Housing & Rehabilitation Association
Thom Amdur, Executive Director
Incorporating Energy Efficiency Into Multi-family, Affordable Housing Rehabilitation Projects

National Housing & Rehabilitation Association
About NH&RA

• Founded in 1971
• Business peer network focused on transaction-oriented education
• Membership includes:
  • Private & Non-Profit Developers/Owners/Managers
  • Lenders
  • Syndicators & Investors
  • Attorneys, Accountants, Consultants & Advisors
  • Market Analysts & Appraisers
  • Housing Finance Agencies & Local Governments
NH&RA Developer Member Profile

• Active developers & owners of LIHTC, HUD-Assisted and/or USDA RD Financed Properties
• Primarily private developers & larger non-profits
• Typical portfolio size approximately 2,000 – 12,000 units
• National footprint with highest density of membership in New England, Mid-Atlantic, Mid-West & California
• Primary delegates typically senior development & finance executives
NH&RA’s Preservation Through Energy Efficiency (PTEE) Initiative

**Background**

- Effectively managing utility expenditures presents an important business opportunity for affordable housing owners in every stage of the development life-cycle.

- Targeted investments can decrease operating expenses and increase cash flow, open up new fee opportunities, increase effective rents and enhance the residual added value of an entire portfolio.
PTEE Continued...

• PTEE was designed to empower decision-makers at affordable housing companies to take immediate executive actions that can create portfolio-wide energy and water efficiencies.

• The cornerstone of the initiative are a series of seven regional “Road Shows”, convening affordable housing executives, along with technical and financial experts to discuss transactional opportunities around energy and utility efficiency.

• The events are supplemented with the PTEE Knowledge Exchange, a dynamic digital companion to the Road Shows featuring searchable online resource center, discussion forums, educational webinars and more...
PTEE Schedule of Events

• Philadelphia, PA – April 3, 2014
• Denver, CO – July 14, 2014
• Minneapolis, MN – September 15, 2014
• Atlanta, GA – October 28, 2014
• Indianapolis, IN – April 9, 2015
• Baltimore, MD – May 7, 2015
• Chicago, IL – September 28, 2015
Understanding The Owner

• Who are the key decision makers? *They are probably developers!*  
• Who will be doing the work? *Probably not the developers!*  
• Is the owner vertically integrated? To what extent?  
• Varsity/Junior Varsity
Communicating With Developers

• Transaction-Oriented / Deal Junkies
• Short Attention Spans
• Very wary of vendors
• Peers make the most effective pitch
• Scalable solutions a big plus
Understanding Company Culture

• Customize your pitch to speak to the motivating company culture:
  • **Developer/Builder**: Primary motivation is developer fee / contracting fee → focus on acquisition or recapitalization opportunities
  • Property Manager: Primary motivator is enhance management fee and cash-flow
  • Owner/Asset Management: Primary motivator is enhancing residual value for sale/take out
  • Non-Profit / Mission: Primary motivation may not be economics
Timing – Capital Events

• Capital events are a major motivator for investments
• It is important to understand the timeline for existing subsidies including LIHTC, Section 8, USDA RD 515, etc...
• You can add value by understanding the programs & requirements you will be layering with (e.g. Fannie/Freddie/FHA/TEBs)
Challenges of Mid-Stream Retrofits

• Additional value proposition & probably subsidy too
  • Properties with the greatest needs are least likely to be able to afford the investment (i.e. Reserves Depleted b/c of Negative Cash Flow)
  • Properties that are currently performing to budget also need boost to overcome inertia, challenge of obtaining consents, etc...
Internal Capacity Variable

• Size and sophistication of firms in affordable housing highly variable
• Vertical integration not universal
• Is there an institutional mechanism in place to manage the process?
  • Asset management—internal professional asset management still relatively uncommon
  • Facilities management—many not exist if use 3rd party management
General Messaging: Value Proposition

• Focus on the financials and the transactional
  • Creating cash-flow
  • Paying back deferred developer fee
  • Control operating risk
  • Hedging against interest rate and commodities increases
  • Enhancing residual value
General Messaging: NEBs

• NEBs are secondary
• Know your audience and be selective
• Frame NEBs in the context of tangible benefits to the property
Understand Regulatory Barriers

• Affordable housing programs are not one-size-fits-all
• Important to understand similarities and differences between LIHTC, HUD, USDA RD
• It is critical to understand the specific challenges each subsidy brings as well as how they work together
• FLEXIBILITY IS KEY
Understanding External Barriers

• Investor, Lender & Regulatory Consents:
  • Difficult to obtain so savings must be substantial.
  • Flexible programs will create more opportunities
  • Guarantees go a long way
  • Trust-worthy data increasingly important
Is It Worth The Effort?

- Split Incentives
- Utility Allowances
- Commodity Pricing
- Capacity
- Investor Consents
Thank You!

Thom Amdur
Executive Director
National Housing & Rehabilitation Association

Learn more at: https://www.housingonline.com/about/preservation-energy-efficiency-initiative/
Lessons Learned:
ICAST *(Residential Network Member)*
Ravi Malhotra, Founder and President
COST EFFECTIVE GREEN REHAB
FOR MULTIFAMILY
1. 20%-30% of residential market
   - Subsidized Affordable – HUD, LIHTC, USDA-RD
   - Non-Subsidized Affordable / Market Rate

2. Underserved and untapped market
   - Commercial Property but Residential Use
   - Complex Ownership / Management Structure
   - Split-Incentive hurdle
   - Utility Rebate programs driven by Meter/Utility Account Holders
Multifamily Housing

Why MF Owners are not signing up?

- **Time Constraint**
  - Complex Process

- **Knowledge**
  - Regulatory Requirements
  - Optimal Solutions
  - Pace of Technology Change

- **Financing**
  - Does not meet ROI threshold
  - Lack of Reserves
Decide to Explore Green Rehab Options

Locate Contractors & Schedule Energy Audit

Compile options into a plan that best fits your needs

Finalize Scope of Work and Budget

Select various contractors for SOW

Send bids to contractors – HVAC, lighting, insulation, windows, etc.


Develop detailed Specifications for bids

Track Results to make sure green rehab met expectations

Close-Out: Pay Invoices, complete reports, Rebate paperwork, etc.

Inspect contractors to ensure quality, schedule & budget

Select various contractors for SOW

Send bids to contractors – HVAC, lighting, insulation, windows, etc.


Develop detailed Specifications for bids

Close-Out: Pay Invoices, complete reports, Rebate paperwork, etc.

Fix Issues if Project did not Pan Out
<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Current Annual Utility Cost</td>
<td>$100,000</td>
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<tr>
<td>Average 25% Savings due to Going Green</td>
<td>$25,000</td>
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<tr>
<td>Reduction in O&amp;M Costs from Green Rehab</td>
<td>$8,500</td>
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<tr>
<td>Increase in Profits due to higher Occupancy and Lower Turn-Over due to Benefits of Greener Property</td>
<td>$6,500</td>
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<tr>
<td><strong>Total Savings/Yr. i.e. Increase in NOI/Cash Flow</strong></td>
<td><strong>$40,000</strong></td>
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<tr>
<td>LifeCycle of Green Rehab (in years)</td>
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<tr>
<td><strong>Total Savings from Green Rehab</strong></td>
<td><strong>$600,000</strong></td>
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<tr>
<td>Cost of Capital</td>
<td>10%</td>
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<tr>
<td><strong>Increase in Value of Property</strong></td>
<td><strong>$400,000</strong></td>
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Successful EE Programs

1. Free to MFAH owner
   ✓ Utility Direct Install - Quick and Hassle-Free
   ✓ Grant Funded – WAP, State, Foundation, etc.

2. One-Stop-Shop
   ✓ Make it hassle-free
     ○ Oversees entire green rehab
   ✓ Provide relevant information
     ○ Cost effective ECMs
   ✓ Access to financing options
     ○ Rebates, Incentives, Grants
     ○ Debt, EPC, PACE, etc.
One-Stop-Shop

✔ Portfolio & Property Assessments
✔ Design and Development
✔ Access to Financing
✔ Green Retrofit:
  1. Energy Efficiency and DSM
  2. Renewable Energy
  3. Water Conservation
  4. Indoor Air Quality
  5. Tenant Engagement
✔ O&M Training
Service Providers Perspective:

1. Financial viability of Green Retrofit is important
   - But take a Holistic approach

2. Leverage utility rebates, grants and incentives
   - But owner “buy-in” is essential for sustainability

3. Offer a comprehensive, hassle-free, and cost-effective program
   - Keep it simple and Make it easy, for the owner/manager

Whole is Greater than Sum of Parts
Questions?

THANKS

http://www.icastusa.org/
Program Experience:
National Church Residences
Alan Mileti, Manager, Energy & Capital Planning
Incorporating Energy Efficiency into Multifamily, Affordable Housing Rehabilitation Projects

Alan Miletí
Manager; Energy & Capital Planning
National Church Residences
September 24th, 2015
National Church Residences Portfolio Overview

- # of properties in US and Puerto Rico: 350
- # of states with properties: 29
- # of residents served: 24,000
- Assets managed: $1.4 Billion
National Church Residences
Utility Data Management

CASS receives invoice from vendor
Invoice is keyed for data, converted to electronic format, and a check is mailed to the vendor

CASS provides a data feed to Ecova
This includes bill image, consumption, dollars spent, and more

Ecova provides a clean view of the CASS data which allows for data reporting and auditing services
This is the end product for our utility purposes
National Church Residences
Invoice Management Savings

Business Days to Pay (2009)

16%
National Church Residences
Invoice Management Savings

Cost of Services: $75,000
12-Month Savings: $222,000

- Inappropriate Rate*: $37,000
- Meter Inaccuracy & Water Leaks*: $70,000
- Meter Reading Errors: $51,000
- Late Fees*: $64,000
National Church Residences
Lighting Retrofit

Survey Properties
- Collected lighting data from properties to determine candidates

Select Program
- Partnered with Utilities Dynamics to retrofit 105 properties (7,736 units)

Retrofit & Evaluate
- Savings were evaluated by comparing pre-retrofit kWh to post-retrofit kWh
- Carbon reduction of 6.2 million lbs / year
- Same as emissions from
  - ~400 cars
  - ~500 acres of forest

Cost: $1.1 million
Savings: $300k/Yr
Payback: 3.6 Yrs
### National Church Residences

**Energy Benchmarking**

Using utility data and property profile information, portfolios can be benchmarked for energy.

There are theoretically 12 property profiles depending on what tenant energy is provided by the owner as opposed to the tenant.

However, NCR properties fall into 6 profiles.

NCR’s benchmarking will be based on the 6 profiles to ensure appropriate comparison of properties.

<table>
<thead>
<tr>
<th>NCR Responsibility for Tenant’s</th>
<th>General Use</th>
<th>Water Heating</th>
<th>Space Heating</th>
<th>Space Cooling</th>
<th>NCR Properties</th>
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<td>93</td>
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National Church Residences
Energy Benchmarking

![Graph showing energy benchmarking for NCR Properties](image-url)
Once benchmarking has been completed, energy outliers can be targeted for energy initiatives.

The best way to identify effective energy initiatives with a timely payback is to have an energy audit performed on the appropriate properties.

However, it is highly recommended the auditing company commit to performing retrofits so that savings can be tied directly to the audit results.
National Church Residences
Energy Benchmarking

Typical Recommendations

- Lighting Retrofits
- Refrigerator Replacements
- Water Conservation Measures
- HVAC Tune-Ups/Upgrades
- Water Heater Replacements
- Insulation Upgrades
- Air-sealing/Weather-stripping
- Door Upgrades
In order to most effectively tackle water efficiency initiatives, it is best to target high consumers within a portfolio. Benchmarking is critical in identifying these properties and ensuring that both savings and water reduction are being maximized.

**Water Benchmarking Process**

1. Collect at least 1 year of water and sewer bills for every property
2. The average of all properties consumption is the benchmark
3. A top-down approach should be used for retrofits targeting high consumers first

- Standardize annual consumption into gallons per person per day
- Investigate anomalies for data errors or inconsistencies and correct or remove
- Once retrofits are complete, compare post-retrofit data to pre-retrofit data to determine savings
National Church Residences
Water Conservation Initiative

**Phase 1 – Pilot**
Surveyed select properties and evaluated 12-month water history

- Evaluated
  - 13 properties
  - 1,401 units

- Implemented
  - 1 property
  - 167 units

- Financials
  - Cost: $24,000
  - Savings: $26,000
  - Payback: 11 months

**Phase 2 – Beta**
Surveyed select properties based on location (high water rates) and age

- Evaluated
  - GA, LA, and MI
  - 40 properties
  - 5,265 units

- Implemented
  - 4 properties
  - 692 units

- Financials
  - Cost: $54,213
  - Savings: $81,834
  - Payback: 8 months

**Phase 3 – Roll-Out**
Benchmarked portfolio for outliers; targeted sites w/ < 12 mo. payback

- Evaluated
  - All properties
  - 170 properties
  - 13,770 units

- Implemented
  - 32 properties
  - 2,822 units

- Financials
  - Cost: $201,700
  - Savings: $332,285
  - Payback: 7 months
National Church Residences
Water Conservation Initiative

Portfolio Savings Analysis

Properties Implemented: 37
Total Project Cost: $268,243
Total Annual Project Savings: $440,119
Average Payback: 7 Months

2011 Water Consumption Benchmark: 73.04 G/P/D
2013 Water Consumption Benchmark: 64.04 G/P/D

Legend
- Pre-Retrofit
- Post-Retrofit
# National Church Residences
## Energy Policy & Procedure Guide

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<th><strong>Energy Data Management Systems</strong></th>
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<td>• New property/acquisition steps</td>
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<td>• Cass/Advantage IQ process</td>
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<th><strong>Utility Accounts</strong></th>
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<td>• Setting up new accounts</td>
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<td>• Commodity procurement policy</td>
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<th><strong>Building Maintenance</strong></th>
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<td>• National vendor policies</td>
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<td>• Equipment standards</td>
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<td>• Emergency generators</td>
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<td>• Gas leaks/water leaks</td>
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<th><strong>Renewables</strong></th>
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<td>• Solar Energy</td>
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<td>• Wind Energy</td>
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Thank You

Alan Miletì
Manager; Energy & Capital Planning
National Church Residences

nationalchurchresidences.org
Discussion Questions

- Are there other examples of programs successfully bringing energy efficiency retrofits to the multifamily, affordable housing sector?
- What are the challenges of incorporating energy efficiency into multifamily, affordable housing rehabilitation projects? What strategies can help mitigate those challenges?
- What type of training, follow-up, or other interventions can be used to sustain energy efficiency improvements after the work has been done (e.g., training for building managers)? How do programs measure and track success?
- Are there other questions, best practices, or lessons learned related to multifamily, affordable housing energy efficiency projects that you would like to share?
Discussion: Challenges to Driving Demand for Improvements in the MF/Affordable Sector

- If management pays the utilities or if the cost of energy is particularly high, properties will be more receptive to investing energy efficiency improvements. However, different rental subsidies to tenants can also impact building management and tenant demand.

- For subsidized housing programs, utility savings are absorbed by the U.S. Department of Housing and Urban Development (HUD) and do not benefit the property owner or tenant.
  - In these programs, HUD pays the difference between the rent level, including the estimated utility costs, and the tenant’s contribution, determined by a percentage of their income.
  - When EE improvements lower energy consumption, tenants will receive a smaller utility allowance and thus may have to pay a higher rent equivalent to the utility costs savings.

- External investors in affordable properties are also not always interested in creating savings opportunities because it can decrease the investor yield.
- Focus your program’s efforts on properties where the savings can be monetized.
Discussion: Strategies to Increase Demand and Maintain Energy Savings

- Direct install programs are easy ways to engage tenants and get the low-hanging fruit of energy savings as they are quick, straightforward, and require no or little financial commitment from tenants or building management.

- Bigger approaches and whole building retrofits require management buy-in and can be more complicated.
  - There are not many examples of whole building retrofits in the affordable, multifamily housing sector, so management may find the investment risky.
  - A pay-for-performance contract could be one way to mitigate risk.

- Energy savings will only be realized if retrofits are well-operated and maintained.
  - Finding operations and maintenance (O&M) staff qualified to operate these energy management systems can be challenging. Additionally, building managers need on-going training in O&M. Industry turnover is high, so follow-up or a maintenance contract may be needed.
Closing Poll

After today's call, what will you do?

- Seek out additional information on one or more of the ideas – **46%**
- Consider implementing one or more of the ideas discussed – **23%**
- Make no changes to your current approach – **23%**
- Other (please explain) – **8%** *(build information into future program and guidance design)*

Please send any follow-up questions or future call topic ideas to: peerexchange@rossstrategic.com
**Peer Exchange Call Series**

*Beginning in October, we will hold one Peer Exchange call every Thursday from 1:00-2:30 pm ET.*

*This is a change from the current call schedule.*

Calls cover a range of topics, including financing & revenue, data & evaluation, business partners, multifamily housing, and marketing & outreach for all stages of program development and implementation.

**Upcoming calls:**
- **October 8:** On-Bill Financing: Reducing Cost Barriers to Energy Efficiency Improvements (201)
- **October 15:** You Are My Sunshine: Integrating Residential Solar and Energy Efficiency (301)
- **October 22:** Programs and Contractors – Top Tips for Successful Relationships! (101)
- **October 29:** Ghosts in the Attic – Horror Stories from the Field (What to Do When Things Go Wrong) (201)

Send call topic ideas to peerexchange@rossstrategic.com